

The instant invention relates to an isocyanate composition which is at least partially masked, comprising at least one carboxylic acid function or salts thereof and being at least partially masked with at least one masking agent, said one masking agent not bearing a carboxylic acid function or salts thereof and said one carboxylic acid function being grafted onto the isocyanate composition by reaction of a precursor of said composition via an agent bearing the carboxylic acid function and a function which reacts with a free isocyanate function, wherein the ratio in equivalents between the carboxylic acid functions or their salts thereof, on the one hand, and the isocyanate functions which are masked, free and which have reacted with the agent bearing carboxylic acid functions, on the other hand, is at least equal to 5%, and is not more than 2/3.

EP 0680 984 teaches a process for the preparation of masked isocyanate compositions usable as such in powder paintings, said compositions having high glass transition temperature aliphatic isocyanates.

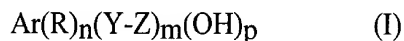
The solution taught in this European patent application is the use as masking agents of derivatives of carboxylated phenols bearing a carbonyl group. Therefore, the masked isocyanate is the condensation product of that phenol with an isocyanate whose Tg (glass transition temperature) is high enough to enable the use of the masked isocyanate in a powder composition.

The passage on page 3, line 26 to 49 of EP 0680 984 gives a formula I similar to formula I of the instant application, but:

- the formula I of EP 0680 984 essentially aims to only one masking agent (please see that line 26 of page 3 of EP 0680 984 begins with the French article "Le" which means that only one masking agent was intended);
- the presence of acidic hydrogen should be avoided (please see the on page 3, lines 26-49 which can be read as follows:); and
- In the definition of the part of said formula, the acid or salt form of the masking agent is not even mentioned.

The passage between page three line 26, to line 49 is translated hereinafter:

"The aromatic hydroxylated on the nucleus derivative, used for masking the isocyanate function is advantageously chosen among those of the ones of formula (I):



in which Ar is an aromatic residue onto which are grafted n groups R, m polar functions Z chosen from nitrile and carbonyl groups, and p hydroxyl functions.

The values of n, m and p are such that the sum $n + m + p$ is not more than the number of substitutable members; advantageously, p is not more than 2 and is preferably equal to 1.

Advantageously, m is not more than two and is preferably equal to 1.

Advantageously n is not more than 3, it is preferably chosen from zero, 1 and 2, and is more preferably equal to zero.

R represents groups that have no bearing on the masking reaction and generally correspond to hydrocarbon-based chains, usually alkyl chains in the etymological sense of the term, i.e. an alcohol whose hydroxyl function has been removed.

Two vicinal groups R can be joined together to form a ring which can be aromatic, for example.

Z is advantageously chosen from groups containing a carbonyl function. Among these functions, mention should be made of alkoxy carbonyl functions (or, in other words, ester functions), the amide function, the ketone function with the preferential condition that there are no acidic hydrogens α to the carbonyl function (ester, ketone or amide). [in other words, the function advantageously does not bear hydrogen, or, if it does bear hydrogen, the corresponding pKa is at least equal to about 20 (one significant figure, preferably 2), more preferably at least equal to about 25]. Thus, the preferred amides (including lactam, or even urea) are advantageously substituted, preferably enough for there to be no hydrogen on the nitrogen of the amide function or such that there are no reactive hydrogens."

In other words, said EP 0680 984 fails to teach:

- the presence of two (or more) different masking agents; and
- the presence of carboxyl group, especially in a quantity that allows the rise of the TG without being detrimental to the mechanical properties.

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SUPPLEMENTAL AMENDMENT

In view of the above comments, the rejection of claims 27-43, 46-51, and 55 under 35 U.S.C. 102 (b) as being anticipated over EP 680,984, should be withdrawn.

In view of the preceding remarks, it is asserted that the patent application is in condition for allowance. Should the Examiner have any question concerning these remarks that would further advance prosecution of the claims to allowance, the examiner is cordially invited to telephone the undersigned attorney at (609) 860-4190. A notice of allowance is respectfully solicited.

Respectfully submitted,

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SUPPLEMENTAL AMENDMENT

Marked-up amended claims

Please amend claim 29 as follows:

29. (Twice amended) A composition according to Claim [28] 27, wherein said agent bearing a carboxylic acid function and a function which reacts with a free isocyanate function is a masking agent bearing a carboxylic acid function.